REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons which follow.

Claims 1-13 are now pending in this application.

The drawings are objected to because Figure 6 should be designated by a legend such as "Prior Art". Figure 6 has been amended to be labeled as "Prior Art".

Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by Aratani et al (U.S. Patent 6,538,675 B2) (hereinafter Aratani). Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aratani. Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aratani in view of Han (U.S. Patent 6,175,387 B1) (hereinafter Han). Claims 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted applicant's prior art (Figure 6) in view of Aratani and further in view of Han.

With respect to claims 1-13, the rejections are respectfully traversed.

Independent claim 1 recites an image decoding apparatus provided with a decoding device which decodes the input coded data of an image for generating an image data, comprising:

"first to N-th (N is an integer more than 2) image format conversion devices for generating and outputting first to N-th images after converting said image data into predetermined image formats." (Underlines added for emphasis)

The image decoding apparatus including the above-quoted features allows for the same image data to be converted into at least two different image formats. For example, the image data could be converted into both a 1080i format and a 480i format. Thus, the same image data could be converted and output in different formats at the same time. Advantages such as those described are discussed in the specification (e.g. Specification page 10, line 25 to page 11, line 14).

Aratani neither discloses nor suggests the image decoding apparatus including the above-quoted features with the same image data being converted into at least two different image formats. In Aratani, each input portion is only connected to a single display format conversion portion (see Aratani Figure 1, reference numbers 3-1, 3-2, 3-3, 3-4, 2-1, 2-2, 2-3,

2-4). Thus, in Aratani, the image data from each image source connected to an input portion can only be converted to a single image format (see Aratani Figure 1, reference numbers 1-1, 1-2, 1-3, 1-4). In contrast, the present claim allows for the same image data to be converted to two or more image formats. Such a conversion is not possible in Aratani where each image source is only connected to a single display format conversion portion.

Therefore, independent claim 1 is neither disclosed nor suggested by the cited prior art and, hence, is believed to be allowable.

Independent claim 2 recites an image decoding apparatus comprising:

"first to N-th decoding devices which convert input first to N-th image coded data for generating and outputting first to N-th image data by decoding said first to N-th image coded data; and

first to N-th image format conversion devices for generating and outputting first to N-th image data by converting any of said image data from among said first to N-th image data into respective predetermined image formats." (Underlines added for emphasis)

The image decoding apparatus including the above-quoted features allows for the first to N-th image format conversion devices to convert any of the first to N-th image data into predetermined image formats. Thus, the first to N-th image data could be distributed among the conversion devices and each conversion device is not limited to image data from a predetermined set of the first to N-th image data. Advantages such as those described are discussed in the specification (e.g. Specification page 15, lines 8-14).

Aratani neither discloses nor suggests the image decoding apparatus including the above-quoted features with format conversion devices that can convert any of a first to N-th image data into predetermined image formats. In Aratani, each image source (Aratani Figure 1, reference numbers 1-1, 1-2, 1-3, 1-4) is only connected to a single display format conversion portion (reference numbers 3-1, 3-2, 3-3, 3-4) through a single input portion (reference numbers 2-1, 2-2, 2-3, 2-4). Each display format conversion portion in Aratani can only convert image data from the image source to which it is connected and cannot convert image data from any image source. Thus, each display format conversion portion in Aratani is limited to converting image data from the image source to which it is connected.

Therefore, independent claim 2 is neither disclosed nor suggested by the cited prior art and, hence, is believed to be allowable.

Dependent claim 3 recites an image decoding apparatus according to claim 2,

"wherein the image decoding apparatus comprises a distribution control apparatus for distributing any of the image data among first to N-th image data respectively to first to N-th image format conversion devices, in response to a request of said first to N-th image format conversion device." (Underlines added for emphasis)

The image decoding apparatus of claim 3 further highlights the distinction that any of the image data among first to N-th image data can be distributed to any of the first to N-th format conversion devices. Claim 3 contains the further distinction that image data is distributed to the format conversion devices in response to requests made by the devices.

Aratani neither discloses nor suggests the image decoding apparatus including the above-quoted features with any of first to N-th image data being distributed to any of first to N-th format conversion devices in response to requests made by the format conversion devices. The Examiner points to the control portion of Aratani as satisfying the features of claim 3 (see Aratani Figure 1, reference number 6; column 4, line 56 to column 5, line 19). However, as is evident from Aratani, Figure 1, the control portion cannot distribute image data from any of the image sources to any of the display format conversion portions because each image source is only connected to a single display format conversion portion. The display format conversion portions in Aratani only receive conversion parameters from the control portion and do not make requests to the control portion for image data from different image sources (see Aratani column 8, lines 41-46).

Therefore, dependent claim 3 is neither disclosed nor suggested by the cited prior art and, hence, is believed to be allowable.

Dependent claim 4 recites an image decoding apparatus according to claim 2,

"wherein at least one of said first to N-th image coded data is input through a PCI (Peripheral Component Interconnect) bus." (Underlines added for emphasis)

The Examiner points to the bus interface of Aratani as meeting the requirement of the above-quoted claim (see Aratani Figure 1, reference number 4; column 4, lines 42-55). However, the bus in Aratani is located after the display format conversion portions and, thus, the image coded data is not input through the bus. Instead, the image data after conversion is output from the display format conversion portions onto the bus. For input, Aratani teaches that each image source communicates to an input portion via a bi-directional serial communications line and not via a bus (see Aratani column 13, lines 44-47).

Therefore, dependent claim 4 is neither disclosed nor suggested by the cited prior art and, hence, is believed to be allowable.

Dependent claim 5 recites an image decoding apparatus according to claim 1, wherein the image decoding apparatus comprises:

"an image synchronizing signal generation device for generating and outputting a first vertical image synchronizing signal used for outputting said image by any one of the image format conversion devices among said first to N-th image format conversion devices; and

first to M-th (M: an integer equal to N-1) image synchronizing signal generating and synchronization adjusting devices for generating and outputting the second to the N-th vertical image synchronizing signals respectively in synchronization with said first vertical image synchronizing signal by said image format conversion devices other than said one of the image format conversion device." (Underlines added for emphasis)

The image decoding apparatus including the above-quoted features allows for image synchronizing signal generation and synchronization adjusting devices to generate vertical image synchronizing signals to be supplied to the image format conversion devices. The vertical image synchronizing signals for each of the images are synchronized to a selected vertical image synchronizing signal of one of the images. Thus, the format conversion devices can output images in synchronization with each other. Advantages such as those described above are discussed in the specification (e.g. Specification page 13, line 25 to page 14, line 6).

The Examiner states that Aratani does not disclose the claimed image synchronizing signal generating and synchronization adjusting devices for generating the synchronization

signals. For this feature, the Examiner points to Han as teaching a synchronization converter. However, the synchronization converter in Han has a different function than the synchronization adjusting devices of the present claim. The synchronization converter in Han is used to adjust a synchronizing signal such that the interval of the synchronizing signal corresponds to the actual data interval of received data (see Han column 3, lines 16-20; column 4, lines 28-58). In contrast, the synchronization adjusting devices of the present claim are used to generate synchronizing signals to be in synchronization with a first synchronizing signal. Thus, the synchronization converter in Han adjusts an interval length of a signal while the synchronization adjusting devices of the present claim adjust the time at which the signals are generated.

The differences between the teaching in Han and the present claim can be further clarified by reference to the figures in Han. In Han, the VGA signals shown in figures 1 and 2 are converted by the synchronization converter to the signals shown in figures 7 and 8 (see Han column 4, lines 9-18). As can be seen in the difference between figure 2 and figure 8 in Han, the interval length of the vertical synchronizing signal is adjusted so that the rising and falling positions of the synchronizing signal correspond to the actual data interval of received data (see Han column 4, lines 28-43). In contrast, figure 4 of the present specification demonstrates the synchronization according to the present claim where the generation of signal A2 is synchronized in time with the generation of signal A1. Rather than changing an interval length based on received data, the present claim changes the time at which a signal is generated based on the time of generation of another signal.

Furthermore, it would not have been obvious to incorporate the synchronization converter as taught by Han into the system of Aratani because synchronization of output signals would not help the system in Aratani. First, it should be noted that the synchronization converter in Han does not synchronize the time of generation of one synchronizing signal to another synchronizing signal as was demonstrated above. Second, even if the synchronizing converter did synchronize the time of generation of the signals, such synchronization would be useless for the system in Aratani. The system in Aratani outputs images from the display format conversion portions onto a bus (see Aratani Figure 1, reference numbers 4-1, 4-2, 4-3, 4-4). Only one bus interface can transfer data on the bus at a time as selected by a bus controller (see Aratani Figure 1, reference number 5; column 4, lines

47-55). Thus, there would be no benefit to synchronizing the outputs of the format conversion portions in Aratani since only one display format conversion portion could output data to the bus at a time.

Therefore, dependent claim 5 is neither disclosed nor suggested by the cited prior art and, hence, is believed to be allowable.

Independent claim 9 recites a semiconductor device similar to the image decoding apparatus of claims 1 and 5. Therefore, claim 9 is believed to be allowable for at least the same reasons claims 1 and 5 are believed to be allowable.

Independent claim 10 recites a semiconductor device similar to the image decoding apparatus of claims 2 and 3. Therefore, claim 10 is believed to be allowable for at least the same reasons claims 2 and 3 are believed to be allowable.

Independent claim 12 recites an image decoding method similar to the operation of the image decoding apparatus of claims 1 and 5. Therefore, claim 12 is believed to be allowable for at least the same reasons claims 1 and 5 are believed to be allowable.

Independent claim 13 recites an image decoding method similar to the operation of the image decoding apparatus of claims 2 and 3. Therefore claim 13 is believed to be allowable for at least the same reasons claims 2 and 3 are believed to be allowable. Claim 13 recites the further distinction that a second vertical image synchronizing signal is generated so as to be synchronized with a first vertical image synchronizing signal.

All dependent claims are believed to be allowable for at least the same reasons as the independent claims from which they depend and based on the additional features that are recited in the claims themselves.

The application is now considered to be in condition for allowance and an early indication of same is earnestly solicited.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of

papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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